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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/617,720	07/17/2000	Martin Nicklin	MSA-021.01	7893

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EXAMINER	
HAMUD, FOZIA M	

ART UNIT	PAPER NUMBER
1647	

DATE MAILED: 04/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/617,720	NICKLIN ET AL.	
	Examiner	Art Unit	
	Fozia M. Hamud	1647	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *12,27,28,30 and 32-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12,27,28, 30 and 32-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Amendment

1a. Receipt of Applicants' amendment and arguments filed on 23 December 2004 is acknowledged. Claims 12, 27, 28, 30, 32-37 are pending and under consideration.

1b. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. The following previous objections and rejections are withdrawn in light of Applicants amendment filed 12/23/04.

(I) The rejection of claims 32 and 33 made under 35 U.S.C § 102(b) as being anticipated by Bentos et al (28 August 1998), is withdrawn, because Bentos does not anticipate clams 33 or 33, as amended, since Bentos discloses an isolated nucleic acid that is identical to SEQ ID NO:1 of the instant application from 786 to 941. Amended claims 32 and 33 are drawn to a nucleic acid which hybridizes to SEQ ID NO:1 from nucleotides 1-600. Therefore, Bentos et al reference does not anticipate instant claims 32 and 33.

Claim rejections-35 USC § 102(e):

3a. Claims 32-37 stand rejected under 35 U.S.C § 102(e) as being anticipated by Ford et al (U.S Patent 6,294,655), for reasons of record set forth in the office actions mailed on 10 October 2003 and 23 June 2004.

Applicants argue that the region of homology between the nucleic acid disclosed by Ford et al and instant SEQ ID NO:1, begins at nucleotide 271 of SEQ ID NO:1, and that the two nucleic acids share only 47.6% homology. Applicants assert that two

nucleic acids that share only 47.6% identity would not be expected to hybridize under stringent condition.

This argument has been considered but is not found persuasive. The instant claims 32 and 33 recite moderate hybridization conditions due to the low wash temperature. Therefore, the complement of the nucleic acid of Ford et al would be expected to hybridize to SEQ ID NO:1, under the moderate hybridization conditions recited in the claims.

Claim Rejections - 35 U.S.C. § 101/112:

4a. Claims 12, 27-28, 30 and 32-37 stand rejected under 35 U.S.C. 101, for reasons of record set forth in the office action mailed on 23 June 2004.

Applicants argue that the polypeptides of the instant invention are members of the interleukin-1 family and are also known as IL-1F, IL-1Fδ, Interelukin-1 delta, IL-HY1, etc, and provides exhibit A, as disclosing said polypeptide. Applicants argue that the IL-IL1 nucleic acid is highly expressed in placenta and to a lesser extent in thymus. Applicants assert that others have shown that IL-IL-1 is not expressed in fibroblasts or entothelial cells, and that this expression pattern explains Applicants' inability to measure the effects of IL-IL1 on Il-1 signaling. Applicants submit that it has been determined that IL-IL1 does not act through IL-1 receptors to initiate IL-1 signaling but that it acts by antagonizing the IL-1R6 response to IL-1ε. Therefore, Applicants conclude that the polypeptide of the instant invention has a specific IL-1 antagonistic activity and would be useful in the treatment of diseases or disorders that are associated with aberrant IL-IL1 level of activity, such as psoriasis and alopecia areata.

Applicants further argue that the claimed nucleic acids are useful in screening method for identifying IL-IL1 therapeutics. Applicants submit references that establish a strong association between alopecia areata with IL1-IL1 and that also IL-1IL-1 and IL-1RN genes may have genetic interaction.

These arguments are not found persuasive. The fact that the nucleic acid of the instant invention is expressed in placenta and thymus does not establish a specific utility for said nucleic acid, because the instant specification does not disclose the significance of said expression. Likewise, the disclosure that IL-IL1 is not expressed in fibroblasts or endothelial cells does not establish a specific or substantial utility for said polypeptide. The instant specification expressly discloses that the IL-IL1 polypeptide of the instant invention does not stimulate or inhibit IL-6 gene expression, and that it has no agonistic or antagonistic IL-1 activity, (see pages 120-121). The instant specification concludes that the IL-IL-1 polypeptide has no direct effect on the IL-1 system. 35 U.S.C. § 101/112 requires that an invention should be supported by either a specific and substantial asserted utility or a well established utility, at the time of filing of the patent application. Therefore, Applicants' inability to measure the effects of IL-IL1 on IL-1 signaling, because this polypeptide is not expressed on fibroblasts or endothelial cells, does not excuse or satisfy this requirement under 35 U.S.C. § 101/112. The instant specification expressly discloses that the polypeptide of the instant invention does not have an antagonistic IL-1 activity. Therefore, Applicants cannot rely on post filing date publications that disclose that IL-IL1 does not act through IL-1 receptors to initiate IL-1 signaling but that it acts by antagonizing the IL-1R6 response to IL-1ε. It is apparent

that the instant invention needed further characterization, to ascertain its specific and substantial utility. However, further characterization is part of the invention and until it had been undertaken, the claimed invention is not complete and is not supported by a specific asserted utility or a well established utility. The instant specification lists a page of disparate diseases or disorders (neurological diseases, cancers, vascular disease, cardiac disorders, psoriasis and alopecia areata etc) that might be treatable or diagnosable using the claimed invention. However, the specification never established a nexus between any of the listed disease and the polypeptide or nucleic acid of the instant invention. The fact that post filing date publications established a link between two of the listed diseases (psoriasis and alopecia areata) and the polypeptide of the instant invention does not provide specific asserted utility or a well established utility, for the claimed invention because said link was not established at time of filing of the instant application.

Therefore, since the instant specification demonstrates that the IL-IL-1 polypeptide of the instant invention does not have an activity similar to IL-1 or to IL-ra, and since the specification discloses no information regarding the physiological significance, functional characteristics or any conditions that involve the nucleic acids of SEQ ID Nos:1, 2 or 3, or the encoded polypeptide, the claimed invention lacks specific and substantial asserted utility or a well-established utility.

5b. Claims 12, 27-28, 30 and 32-37 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a substantially asserted utility or a well established utility for the reasons set forth above,

one skilled in the art clearly would not know how to use the claimed invention. The instant specification discloses that the IL-IL-1 polypeptide has no direct effect on the IL-I system, therefore, this polypeptide cannot be used to treat or diagnose disorders that involve IL-1. Accordingly, there is no specific and substantial asserted utility or well established for the claimed invention. Although the specification describes the structure of the IL-IL-1 polypeptide of the instant invention and discloses that it is homologous to IL-1 andIL-1ra, the skilled artisan would not know how to use said polypeptide, because Applicants do not provide any information regarding biological activity or physiological significance of said polypeptide. Instant specification also fails to establish a correlation between the claimed invention and a disease state.

5c. The rejection of claim 35 for reciting non-statutory subject matter, is maintained for reasons of record set forth in the office action mailed on 23 June 2004. Applicants did not amend the claim to overcome this rejection, nor did they address this rejection.

Claim rejections-35 U.S.C. § 112, second paragraph:

6. The rejection of claim 35 made under 35 U.S.C. 112, second paragraph, is also maintained for reasons of record set forth in the office action mailed on 23 June 2004. This rejection was not addressed by Applicant.

New Rejections:

Priority:

7a. Based on the information given by Applicants and an inspection of the parent application, the Examiner has concluded that the subject matter defined in this application is not supported by disclosure of the prior applications (60/44298, filed on 16

July 1999), because, although the claimed nucleic acid is disclosed in the prior application, the parent application does not provide a specific and substantial asserted utility or a well established utility for the claimed invention. Accordingly, the subject matter defined in claims 12, 27, 28, 30, 32-37, is afforded an effective filing date of 12 July 2000, which is the filing date of the current application.

Should the applicant disagree with the examiner's factual determination above, it is incumbent upon the applicant to provide the serial number and specific page number(s) of any parent application filed prior to 07/12/2000, which specifically supports the particular claim limitation for each and every claim limitation in all the pending claims which applicant considers to have been in possession of and fully enabled for prior to 07/12/2000.

Claim rejections-35 USC § 102(b):

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8a. Claim 32 is rejected under 35 U.S.C § 102(b) as being anticipated by Jeffreys et al (Accession Number AAQ95200; 06/29/1995).

Jeffreys et al teach an isolated nucleic acid that shares 78.6% homology to instant SEQ ID NO:3, recited in claim 32, (See attached copies of the comparisons of SEQ ID NO:3 claimed in the instant invention and the sequence of the reference (SEQUENCE COMPARISONS 'I").

Instant claim 32 in part, is drawn an isolated nucleic acid molecule which hybridizes to nucleic acid of SEQ ID NO:3. Therefore, the complement of the nucleic acid disclosed in the Jeffreys et al reference would be expected to hybridize to instant SEQ ID NO:3, since it shares 78.6% homology to SEQ ID NO:3. As such, Jeffreyes et al reference anticipates the instant claim 32 in the absence of any evidence to the contrary.

8b. Claims 32 is rejected under 35 U.S.C § 102(b) as being anticipated by Stausberg, (Accession Number:AI252833, 11/05/1998).

Stausberg et al teach an isolated nucleic acid that shares 74.8% homology to instant SEQ ID NO:3, recited in claim 32, (See attached copies of the comparisons of SEQ ID NO:3 claimed in the instant invention and the sequence of the reference (SEQUENCE COMPARISONS 'II").

Instant claim 32 in part, is drawn an isolated nucleic acid molecule which hybridizes to nucleic acid SEQ ID NO:3. Therefore, the complement of the nucleic acid disclosed in the Stausberg et al reference would be expected to hybridize to instant SEQ ID NO:3, since it shares 74.8% homology to SEQ ID NO:3. As such, Stausberg et al reference anticipates the instant claim 32 in the absence of any evidence to the contrary.

Claim rejections-35 USC § 102(a):

A person shall be entitled to a patent unless –

> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

8c. Claims 32 and 33 are rejected under 35 U.S.C § 102(a) as being anticipated by Mulero et al (16 October 1999).

Mulero et al teach an isolated nucleotide which comprises shares 97.1% to the polypeptide of SEQ ID NO:1 (See attached copies of the comparisons of SEQ ID NO:1 claimed in the instant invention and the sequences of the references (SEQUENCE COMPARISONS 'III').

Instant claim 33 recites " an isolated nucleic acid comprising 300 consecutive nucleotides 1-600 of SEQ ID NO:1" , while claim 32 is drawn to an isolated nucleic acid which hybridizes to nucleotides 1-600 ofSEQ ID NO:1.

The nucleic acid of Mulero et al comprises over 500 consecutive nucleotides 1-600 of SEQ ID NO:1. Therefore, the isolated nucleotide disclosed Mulero et al meets the limitations recited in instant claims 33, since it comprises over 500 consecutive nucleotides of SEQ ID NO:1, 1-600. It also meets the limitation recited in claims 32 and 33, because a complement of said nucleic acid would be expected to hybridize to instant nucleotide of SEQ ID NO:1, 1-600, under the recited conditions. . Therefore, Mulero et al reference anticipates the instant claims 32 and 33 in the absence of any evidence to the contrary.

Claim rejections-35 USC § 102(e)

8d. Claims 32-37 are rejected under 35 U.S.C § 102(e) as being anticipated by Ford et al (U.S Patent 6,294,655). (SEQ ID NO:6 of U.S Patent 6,294,655, was disclosed in parent Application Number 09/287,210 filed on 05 April 1999, thus the effective filing date of U.S Patent 6,294,655 is 05 April 1999).

Ford et al teach an isolated nucleotide encoding Interleukin-1 Receptor Antagonists, said nucleic acids which comprise a label, expression vectors containing said nucleotides, host cells comprising said vectors, method of making the encoded polypeptides and methods of using said polypeptides, (see abstract and column 3, line 3 through column 5, line 3 and column 9, 1-4). The nucleotide disclosed by Ford et al shares 97.1% sequence similarity to the instantly claimed SEQ ID NO:1, nucleotides 1-600; (See attached copies of the comparisons of SEQ ID NO:1 claimed in the instant invention and the sequences of the references (SEQUENCE COMPARISONS 'IV").

Instant claims 32-37 are drawn to an isolated human nucleic acid comprising 100 consecutive nucleotides of SEQ ID NO:1, or which hybridizes to nucleotide of SEQ ID NO:1, nucleotides 1-600. A complement of the nucleotide disclosed by Ford would be expected to hybridize to SEQ ID NO:1, 1-600 and also meets the "the 300 consecutive nucleotides of SEQ ID NO:1, 1-600" limitation recited in instant claim 33(a), and the limitations recited in claims 34-37. It would also be expected to hybridize to nucleotide of SEQ ID NO:1, SEQ ID NO:3. Therefore, Ford's et al reference anticipates the instant claims 32-37 in the absence of any evidence to the contrary.

Claim rejections-35 USC § 112, second:

9. Claims 34-37 are rejected under 35 U.S.C. 112, second paragraph,, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9a. Claims 34 and 36 depend from cancelled claims 26, 29 and 31. Claims 35 and 37 are rejected because they depend from claim 34. Appropriate correction is required.

Conclusion:

10. No claim is allowable.

Advisory Information:

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fozia M. Hamud whose telephone number is (571) 272-0884. The examiner can normally be reached on Monday, Thursday-Friday, 6:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brenda G. Brumback can be reached on (571) 272-0961. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Fozia Hamud
Patent Examiner
Art Unit 1647
05 April 2005

JANET ANDRES
PRIMARY EXAMINER